What is claimed is:

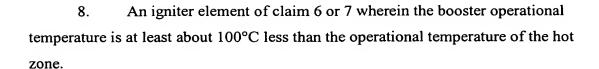
1. A sintered ceramic igniter element comprising a conductive zone, a power booster zone, and a hot zone,

the booster zone having a PTCR and a resistivity greater than the conductive zone and less than the hot zone,

the hot zone having a resistivity greater than the booster zone.

- 2. An igniter element of claim 1 wherein the resistance of the booster zone permits i) current flow to the igniter hot zone and ii) resistance heating of the booster region during use of the igniter.
- 3. An igniter element of claim 1 or 2 wherein the resistance of the booster zone increases during application of current through the igniter and heating of the booster zone.
- 4. An igniter element of any one of claim 1 through 3 wherein the igniter comprises in sequence the conductive zone, the booster zone and the hot zone.
- 5. An igniter element of any one of claims 1 through 4 wherein the three zones differ in operational temperature during use of the igniter.
- 6. An igniter element of claim 5 wherein the hot zone has a higher operational temperature than the booster zone, and the booster zone has a higher operational temperature than the conductive zone.

7. An igniter element of claim 6 wherein the booster operational temperature is at least about 200°C higher than the operational temperature of the conductive zone.



An igniter element of any one of claims 1 through 8 wherein the room temperature resistivitance of the conductive zone is less than about 50 percent of the room temperature resistivitance of the booster zone.

- 10. An igniter element of any one of claims 1 through 9 wherein the room temperature resistivitance of the booster zone is less than about 70 percent of the room temperature resistivitance of the hot zone.
- 11. An igniter element of any one of claims 1 through 10 wherein the operational temperature resistivity of the booster zone is at least about 50 percent greater than the operational temperature resistivity of the hot zone.
- 12. A sintered ceramic igniter element comprising at least three zones of differing resistivity.
- 13. An igniter element of claim 12 wherein the three zones differ in operational temperature during use of the igniter.
- 14. A method of igniting gaseous fuel, comprising applying an electric current across an igniter an igniter of any one of claims 1 through 13.
- 15. A method of claim 14 wherein the current has a nominal voltage of 6, 8, 10, 12, 24, 120, 220, 230 and 240 volts.
- 16. A method of claim 14 or 15 wherein a hot zone of the igniter reaches at least about 1000°C within about one second of applying the current.

17. through 13.

A heating apparatus comprising an igniter of any one of claims 1

- 18. The apparatus of claim 17 wherein the apparatus is an instantaneous water heater.
- 19. The apparatus of claim 17 wherein the apparatus is a cooking apparatus.

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